

Letter to the Editor

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Conventional Radiograph Is Still Advised in the Diagnostic Work-up of a Shoulder Dislocation; a Letter to the EditorLukas P.E. Verweij^{1*}, Henk-Jan van der Woude², Michel P.J. van den Bekerom³

1. Department of Orthopedic Surgery, Amsterdam University Medical Centers, University of Amsterdam, Amsterdam Movement Sciences (AMS), Academic Center for Evidence-Based Sports Medicine (ACES), Amsterdam, The Netherlands.

2. Department of Radiology, Onze Lieve Vrouwe Gasthuis, Amsterdam, The Netherlands.

3. Department of Orthopedic Surgery, Onze Lieve Vrouwe Gasthuis, Amsterdam, The Netherlands.

*Corresponding author: Lukas P.E. Verweij; Email: l.p.verweij@amsterdamumc.nl

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Dear editor:

A shoulder dislocation is a common diagnosis at the emergency department, showing an incidence of 23.9 per 100,000 person-years (1). In the current diagnostic work-up, a radiograph is often used to confirm the dislocation. As radiographs are associated with radiation exposure, the ultrasound has been proposed as an alternative (2). Therefore, the study by Entezari et al is of great importance in evaluating the applicability of the ultrasound (3). However, the authors suggest that the ultrasound can be used as an alternative to the radiograph. In our opinion, an important advantage of the radiograph has not been discussed and we question some decisions that were made in terms of methodology. Therefore, we think that this study has to be seen in the light of these remarks.

An anterior shoulder dislocation can be accompanied by glenohumeral bone defects, such as glenoid bone loss, greater tuberosity fractures or Hill-Sachs lesions (4). Griffith et al showed that glenoid bone loss is present in up to 41% and a Hill-Sachs lesion is present in up to 81% after primary anterior dislocation (5). Glenohumeral bone defects are meaningful, as they can be decisive in advising patients to be treated with a bone augmentation procedure to prevent further damage to the glenohumeral joint (6). In addition, especially for large glenohumeral bone defects, a radiograph can be used to determine if a CT scan or MRI is indicated to evaluate the defects (4). An AP radiograph, trans scapular radiograph or axial radiograph of adequate quality can identify these defects through absence of the sclerotic line or presence of an impression fracture of the posterolateral side of the humeral head, following an anterior dislocation (4, 7). However, Gottlieb et al showed that post-reduction radiographs did not identify new fractures in addition to the pre-reduction radiograph (8). Ultrasound might be able

to determine if the shoulder is dislocated, but it is unclear if ultrasound is able to detect these defects. As additional radiographs do not seem to identify additional fractures after reduction, a single radiograph might be valuable after dislocation or reduction. That being said, a radiograph might be valuable in detecting large bone defects, but a CT scan remains the gold standard.

The aim of this review states that the authors wanted to evaluate the efficacy of ultrasound in diagnosis of shoulder dislocation and confirmation of shoulder reduction. However, as only one primary outcome is shown in table 2, it seems like the results have been pooled for some studies. The sensitivity and specificity has been determined of either diagnosis before reduction, diagnosis after reduction or diagnosis before and after reduction. We question the validity of the sensitivity and specificity, as diagnosing dislocation and reduction successfully might not be the same thing. The definition of a positive test is not reached through the same or a similar image, therefore the groups are different and pooling them seems impossible. Furthermore, the authors did not distinguish between anterior, posterior and inferior dislocation. Not only do posterior and anterior dislocations show clear distinctions in terms of presentation and clinical findings, they show different images in terms of radiology as well (9). Therefore, the shoulder dislocation directions should be analyzed separately.

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CONFLICT OF INTEREST

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